



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,387	09/23/2003	Zheng Tan	IP-024170	2460
1726 7590 01/15/2008 INTERNATIONAL PAPER COMPANY 6285 TRI-RIDGE BOULEVARD LOVELAND, OH 45140			EXAMINER FORTUNA, JOSE A	
			ART UNIT 1791	PAPER NUMBER
			MAIL DATE 01/15/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/668,387

Applicant(s)

TAN ET AL.

Examiner

José A. Fortuna

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-9 and 20-26, 28-38 are rejected under 35 U.S.C. 102(b) as being anticipated by LINDAHL et al., (referred hereafter as LINDAHL), US Patent No. 4,599,138).

LINDAHL teaches peroxide bleaching cellulosic fibers at a pH of 4.0 to 9.5 (column 3, lines 41-47) in reactor 20 followed by a refining treatment (16). LINDAHL teaches that heavy metals such as iron, manganese and copper have a catalytic effect on the decomposition of peroxide and the degradation of lignocellulosic material (column 1, lines 10-23). Although LINDAHL removes some of the heavy metals some remain which have a lower catalytic effect (see Table III, wherein mg/kg iron/wood remains in the wood pulp). That is, the total elimination of the transitional metals is almost impossible and the use of the peroxide as taught by LINDAHL would read on the above claims as claimed, since there would be some transitional metals in pulps and there is nothing on the claims that limits the addition of a transitional metal ion and peroxide to the pulp. Moreover, LINDAHL teaches the use of peroxide with ionic metals, including salts and hydroxides, e.g., NaOH, sodium silicate, etc., which would read on the claims as claimed, specially the claims in which the metal ion and peroxide composition is added to the pulp, e.g.,

Art Unit: 1791

claim 26, see column 4, lines 32-56. Note also that LINDAHL teaches a range of temperature and residence times overlapping the claimed range, see column 4, lines 32-56.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1791

Claims 1-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over LINDAHL et al., (referred hereafter as LINDAHL), US Patent No. 4,599,138) with or without of KEMPF, US Patent No. 4,410,397.

LINDAHL invention has been discussed above. LINDAHL does not teach the addition of a transitional metal ions and peroxide to a pulp. However, KEMPF teaches certain metals such as manganese, copper and iron reduce pulp viscosities and are added to lignocellulosic material when producing pulp unsuitable for paper, but is well constituted for the production of viscose rayon or other cellulosic derivatives. It would have been obvious to the routineer to leave in the manganese, copper and iron or even add the metals to activate the peroxide if the desired product is viscose rayon. It is noted that the instant specification [0014] - teaches that the present invention is applicable in the dissolution of pulp for viscose production. KEMPF further teaches that adding metal additives, tin, vanadium and titanium during peroxide bleaching at a pH of 1-7 retards the viscosity loss and degradation due to peroxide oxidation and minimizes consumption of peroxide (column 3, lines 10-17 and column 4, lines 2-6) and activates the peroxide's selective oxidative attack on the lignin (column 4, lines 41-44). It would have been obvious top the artisan to add the metal additive of KEMPF to retard the viscosity loss and degradation due to peroxide oxidation and minimize consumption of peroxide and activate the peroxide's selective oxidative attack on the lignin during the bleaching of LINDAHL. The products of KEMPF and LINDAHL are paper products which is one of the disclosed products of Applicant [14]. See KEMPF, column 3, lines 62-68, for using a temperature of 40 to 120 °C; for a time of ½ to 8 hours at a consistency of 0.1 to 20%.

Art Unit: 1791

KEMPF as LINDAHL could be a combination of chemical and mechanical treatments (column 1, lines 35-39). LINDAHL teaches that the process applies to both softwoods and hardwoods (column 5, lines 14-15) and results in a satisfactory product when either is used. It would have been obvious that after the process of LINDAHL, they can both be used to make paper and are thus substantially the functional equivalent. See LINDAHL, TABLES II, IV and VI for Canadian Standard Freeness (CSF) within the claimed range.

6. Claims 10-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over LINDAHL or KEMPF.

LINDAHL and KEMPF teach similar pulps as claimed and have been treated in similar manner, i.e., using peroxide and a metal ion compounds, see above. In the event any differences can be shown for the product -by-process claims 10-19 as opposed to the product taught by the reference LINDAHL or KEMPF such differences would have been obvious to one of ordinary skill in the art as routine modification of the product in the absence of a showing unexpected results, see *In re Thorpe*, 227 USPQ 964 (CAFC 1985).

As the afore mentioned claims are product by process claims, it is deemed that "[A]ny difference imparted by the product by process claims would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicants to establish that their product is patentably distinct, ..." *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

Further, "[P]rocess limitations are significant only to the extent that they distinguish the claimed product over the prior art product." *In re Luck*, 177 U.S.P.Q. 523 (1973).

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 and 20-23 of copending Application No.

11/657,272. Although the conflicting claims are not identical, they are not patentably distinct from each other because the only difference between the claims is the refining of the fibers after the treatment. However, refining the fiber is a common operation in the pulp and papermaking industry to modify the morphology of the fibers to desired levels depending upon the use of such pulps, e.g. refining to decrease the size of the fibers or to fibrillate the fibers such to increase inter-fiber bonding, etc. Note also that US Patent No. 4,599,138 to LINDAHL et al. teaches the conventionality of refining pulps, see above

Art Unit: 1791

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure in the art of "Peroxide Treatment of Papermaking Pulps."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José A. Fortuna whose telephone number is 571-272-1188. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/José A Fortuna/  
Primary Examiner  
Art Unit 1791

JAF